

Amendment to the Claims

1. (Original) A method for establishing communications between a first node outside of a computer network and a second node within the computer network, comprising:

transmitting a message from the first node to a logical target address, the logical target address being among a set of logical addresses reserved for nodes within the network, the logical target address further not being in use by any of the nodes within the network;

when the message is received by a receiving node within the network and the receiving node generates an address resolution protocol request requesting a response from any node using the logical target address of the message, determining in the second node that no response to the generated address resolution protocol request is transmitted to the receiving node;

in response to so determining:

sending from the second node a response to the generated address resolution protocol request indicating that the second node is using the logical target address of the message;

configuring the second node to receive messages at the logical target address of the message;

receiving the message in the second node from the receiving node at the logical target address of the message;

sending a reply to the message from the second node to the first node;

receiving the reply in the first node; and

in the first node, using the logical target address of the message to communicate with the second node.

2. (Original) The method of claim 1, further comprising, in the first node, using the logical target address of the message to configure the second node.

3. (Original) A method in a first node within a first network for establishing contact with a second node outside the first network, the first node having a physical address, comprising:

detecting an address resolution request broadcast within the first network, the address resolution request containing a logical target address;
determining whether an address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node;
if it is determined that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node:
transmitting an address resolution response to the detected address resolution request containing the physical address of the first node; and
adopting the logical target address contained by the detected address resolution request as the logical address of the first node.

4. (Original) The method of claim 3 wherein the physical address of the first node is an Ethernet address.

5. (Original) The method of claim 3 wherein the physical address of the first node is a media access control address.

6. (Original) The method of claim 3 wherein the logical target address is an Internet protocol address.

7. (Original) The method of claim 3 wherein it is determined that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node if at least a threshold period of time elapses after the address resolution request is detected without a response to the detected address resolution request being detected.

8. (Original) The method of claim 3 wherein it is determined that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node if the detected address resolution request is rebroadcast at least a threshold number of times without a response to the detected address resolution request being detected.

9. (Original) The method of claim 3, further comprising, in response to detecting an address resolution request broadcast within the first network, causing to be broadcast in the first network a second address resolution request, the second address resolution request containing as its physical source address the physical address of the first node, the second address resolution request containing as its logical target address the logical target address contained in the address resolution request, and wherein it is determined that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node if at least a threshold period of time elapses after the second address resolution request is broadcast without a response to the second address resolution request being detected.

10. (Original) The method of claim 3, further comprising, in response to determining that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node, sending a gratuitous address resolution protocol request identifying the first node as the owner of the logical target address contained in the detected address resolution request.

11. (Original) The method of claim 3, further comprising:
receiving a message containing as its physical target address the physical address of the first node and containing as its logical target address the logical target address contained in the detected address resolution request; and

in response to receiving the message, sending a gratuitous address resolution protocol request identifying the first node as the owner of the logical target address contained in the detected address resolution request.

12. (Original) A first node within a first network that contacts a second node outside the first network, comprising:

- an address component storing a physical address of the first node;
- a request detector that detects an address resolution request broadcast within the first network, the address resolution request containing a logical target address;
- a candidate address identification subsystem that determines whether an address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node; and
- an adoption subsystem that, if it is determined by the candidate address identification subsystem that no address resolution response to the detected address resolution request is transmitted from a node in the first network other than the first node, transmits an address resolution response to the detected address resolution request containing the physical address of the first node and adopts the logical target address contained by the detected address resolution request as the logical address of the first node.

13. (Original) A method in a first node outside of a computer network to contact a second node within the computer network, comprising:

- transmitting a message to a logical target address, the logical target address being among a set of logical addresses reserved for nodes within the network, the logical target address further not being in use by any of the nodes within the network such that, when the message is received by a receiving node within the network, the receiving node will generate an address resolution protocol request, the generated address resolution

protocol request requesting a response from any node using the logical target address of the message; and
receiving a reply to the message originating at the second node, the reply signifying that, in response to receiving the generated address resolution protocol request, the second node adopted the logical target address of the message for its use.

14. (Original) The method of claim 13 wherein the transmitted message is a ping packet.

15. (Original) The method of claim 13, further comprising transmitting a further message to the second node at the logical target address of the message.

16. (Original) The method of claim 13, further comprising transmitting to the second node one or more configuration instructions for configuring the second node.

17. (Original) The method of claim 13, further comprising transmitting to the second node one or more configuration instructions for configuring the second node, the transmitted instructions including an instruction to utilize a specified logical address.

18. (Original) A computer-readable medium whose contents cause a first node outside of a computer network to contact a second node within the computer network by:

transmitting a message to a logical target address, the logical target address being among a set of logical addresses reserved for nodes within the network, the logical target address further not being in use by any of the nodes within the network such that, when the message is received by a receiving node within the network, the receiving node will generate an address resolution protocol request, the generated address resolution

protocol request requesting a response from any node using the logical target address of the message; and
receiving a reply to the message originating at the second node, the reply signifying that, in response to receiving the generated address resolution protocol request, the second node adopted the logical target address of the message for its use.

19. (Original) A method in a first node within a first network for establishing contact with a second node outside the first network, comprising:

identifying a first message broadcast within the first network for which no reply is transmitted, the first message including a source address associated with the second node; and

in response to identifying the first message, sending a second message to the second node.

20. (Original) The method of claim 19 wherein the second message contains an address associated with the first node.

21. (Original) The method of claim 19 wherein the first message contains a target address, and wherein the method further comprises, subsequent to identifying the first message:

adopting the target address contained by the first message as the address of the first node;

including the target address contained by the first message in the second message as the source address of the second message; and

receiving messages having as their target addresses the target address contained by the first message.

22. (Original) The method of claim 19 wherein the first message is an address resolution protocol request.

23. (Original) The method of claim 22 wherein the second message is an address resolution protocol reply.

24. (Original) The method of claim 19 further comprising:
subsequent to sending the second message, receiving configuration instructions from the second node; and
applying the received configuration instructions.

25. (Original) A method in a first node outside a local area network for contacting a device connected to the local area network, comprising:
transmitting a message to a logical address in the local area network, the logical address being indicated to be unused; and
receiving a reply to the message from the device indicating that the device is receiving messages at the logical address.

26. (Original) The method of claim 25, further comprising transmitting a further message to the device at the logical address.

27. (Original) The method of claim 25, further comprising transmitting to the device at the logical address one or more configuration instructions for configuring the device.

28. (Original) The method of claim 25, further comprising transmitting to the device at the logical address one or more configuration instructions for configuring the device, the transmitted instructions including an instruction to utilize a specified logical address.

29. (Original) A method in a first computing device, comprising:
determining that the first computing device has been connected to a distinguished computer network, the distinguished computer network

being a first-level computer network that is connected to a second-level computer network; and
utilizing the distinguished computer network and the second-level computer network to establish contact with a second computing device that is outside the distinguished computer network.

30. (Original) The method of claim 29 wherein the distinguished computer network is a local area network.

31. (Original) The method of claim 29 wherein the second-level computer network is the Internet.

32. (Original) The method of claim 29 wherein the second-level computer network is a wide area network.

33. (Original) The method of claim 29, further comprising:
detecting a message sent by the second computing device from an address of the second computing device to an unused address reserved for use by the distinguished computer network;
adopting the unused address for use by the first computing device; and
responding to the detected message with a message addressed to the address of the second computing device from the adopted address.

34. (Original) The method of claim 29, further comprising:
monitoring traffic in the distinguished network to identify one or more candidate addresses for a gateway between the distinguished network and one or more other networks; and
sending a message to a predetermined address for the second computing device via each of the identified gateway candidate addresses.

35. (Original) The method of claim 34, further comprising sending one or more stimuli messages to elicit traffic in the distinguished network for monitoring.

36. – 73. (Canceled)
